Call for Proposals

FY 2015 Laboratory Directed Research and Development (LDRD) Program

I. Overview

The purpose of the LDRD program is to encourage innovation, creativity, originality, and quality to keep the Laboratory's research activities and staff at the forefront of science and technology.

The FY2015 LDRD program will have two funding tracks for proposals:

    A) The Lab-Initiative track, and
    B) The Area-Initiative track.

A) The Lab-Initiative Track

Proposals in the Lab-Initiative track should foster the development of new teams and activities in areas that directly support the high level strategic goals of the Laboratory (http://www.lbl.gov/LBL-Programs/).

These proposals will be submitted to one of three strategic initiatives:

    1) Extreme Data for Science
    2) ALS-II Science and Technology
    3) Microbes to Biomes

Proposals outside of the topics listed above that support other potential Laboratory-wide strategic goals will be grouped together in an additional general category.

PIs will indicate on their proposal submission that they wish to be reviewed under the Lab-Initiative track.

Criteria

All proposals will be evaluated based on: i) their alignment with the Lab's strategic initiatives, ii) the quality of the proposed research, and iii) the ability to leverage the unique cross-divisional capabilities of the Lab.

Review

Lab-Initiative proposals will be reviewed in two rounds:

1) First by a committee formed and managed by the *Initiative Review Lead* (see table below), and
2) Second by the Scientific Division Directors, Associate Laboratory Directors, and Senior Lab management.

Both reviews will involve a combination of an evaluation of the written proposal and presentation(s) to a review team. The proposal text and presentation may be modified after the first round based on input from the review committee.

The *LDRD Lab-Initiative Review Leads* will organize and manage the first round of review, including selection of other experts for the review committee.

For the second round of review, the set of related Lab-Initiative proposals will be presented as a portfolio to a review committee of the Scientific Division Directors, Associate Laboratory Directors, and other Senior Lab management. For the second presentation, the Initiative Review Lead will also be responsible for a coordinated presentation of the proposals and may include one or more of the PIs.

Proposals that are considered scientifically competitive by the first review committee, but not well aligned with the Lab-Initiative, will be automatically considered in the Area-Initiative track.

B) The Area-Initiative Track

Area-Initiative track proposals will be accepted in each of the scientific Areas of the Lab:

1) Biosciences,
2) Computing Sciences,
3) Energy Sciences,
4) Energy Technologies, and
5) Physical Sciences

Criteria

Area-Initiative proposals will be evaluated based on their novelty and scientific quality, as well as the ability to introduce new research activities in areas important to one or more of the Scientific Divisions of the Lab. High-risk projects with the potential for high scientific impact are strongly encouraged.

Review

The Associate Laboratory Director and the Area specific Division Directors will review the proposals in their area; they may also include additional reviewers in the process. The PI will be involved in a single round of review involving the written proposal and follow-up to Area and Division management. The highly ranked Area Proposals will be presented by the relevant ALD or Division Director

to the Lab Director and Deputy Lab Director for final ranking and funding level recommendations.

II. FY15 Lab-Initiative Priorities

As described above, Lab-Initiative proposals must be aligned with one of the topics of the Lab Strategic Plan:

Extreme Data for Science: We intend to fund proposals that address the use of large-scale, high bandwidth, or multi-modal data in areas of strategic importance to the lab. Of particular interest are topics related to the management and analysis of data from the Laboratory's scientific facilities, the innovative integration of simulation and experimental data, and joint projects with the Berkeley Institute for Data Science in campus. Proposals are encouraged in the foundational areas of computing or networking research, as well as cross-area collaborations to apply advanced computing, networking, and data analysis to scientific problems. Further details can be found at: https://sites.google.com/a/lbl.gov/ldrd-initiative-big-data-science/

ALS-II Science and Technology: Proposals that contribute to building a case for a diffraction limited soft x-ray storage ring facility at LBNL are encouraged from all divisions. Proposed projects are expected to seed new science and technology, for example using existing facilities or using simulation. Outcomes should eventually exploit the unique high brightness capabilities of an ALS-II, including concepts involving diffraction-limited, tightly focused, and high power coherent light.

Microbes to Biomes: We seek proposals to develop a mechanistic understanding of multi-scale interactions among molecules, microbes, plants, metazoans, and/or the abiotic environment, and their feedbacks. Topics could include research to understand gut, soil, or other microbiomes that are important for fuel, food, health, and environmental security.

Initiative Topic	LDRD Lab-Initiative Review Lead / Deputy
Extreme Data for Science	Jonathan Carter / David Brown
ALS-II Science and Technology	Steve Kevan / Melissa Summers
Microbes to Biomes	Jay Keasling / Ed Turano

III. FY15 Area Priorities

The Area-Initiative LDRDs are encouraged in new "breakthrough" science areas.

Within each Area, the particular research topics for which proposals are especially encouraged are:

- Biosciences: i) cost-effective energy solutions that reduce the impacts of fuel production, ii) ecosystem research to improve environmental quality and the efficient use of resources, iii) biological response to environmental challenges to improve human health and biosphere fitness, and iv) scalable and flexible biomanufacturing technologies for cost-effective solutions to problems in energy, environment, and health

- Computing Sciences: i) new mathematical approaches for enhancing scientific discovery, and ii) advanced networking for data-intensive sciences

- Energy Sciences: All aspects of mesoscale science including: i) systems for energy conversion with bio-inspired functionality, ii) in situ and in operando chemistry, iii) adaptive materials, and iv) Earth material properties and dynamics

- Energy Technologies: i) measurement, control, and communication techniques for energy and environmental systems, ii) climate change - mitigation and adaptation through novel technologies, simulations, and policies, iii) energy technologies and policies for developing countries, and iv) water-climate-energy dependencies and trajectories, including impacts to water quality

- Physical Sciences: i) nuclear energy and community impact, ii) laser plasma acceleration, iii) computational nuclear physics, iv) Applied Physics Foundry science, v) Accelerator Modeling Center science, vi) advanced manufacturing innovation, and vii) DESI, LZ, and LHC upgrades

IV. Detailed Requirements and Review Process

Proposals must include:

1) Cover Sheet,
2) Technical proposal (as described below),
3) Budget Request form,
4) NEPA/CEQA form,
5) Human Subject and Animal Use form, and
6) Intellectual Property forms

The technical proposal section may not exceed a maximum of three pages of text with up to one additional page for figures and references. *Continuing project* proposals must include within the three page limit a statement of progress to date, current fiscal year plans, as well as prospects for follow-on funding.

Proposed work cannot supplement existing DOE projects, nor can it contain

construction line-items or maintenance activities. *The expected duration of projects started in FY15 is two years*, with a third year available in outstanding and exemplary circumstances.

Proposals should be prepared carefully following the given specifications and requirements available online at Detailed Proposal Guidance.

Budget

Budgets must include payroll burden, procurement burden and support burden, if applicable, along with scientific organization burden. General laboratory overhead (e.g., general and administrative overhead and site support) estimate should be included as a separate line item.

V. Schedule and Support

The nominal schedule for the FY 2015 cycle is posted - see LDRD Review Schedule. Final detailed scheduling of the review period and any presentations will be arranged by the ALD and/or Lab Director's offices.

Investigators should work with their divisional or Area support staff to prepare their LDRD proposals. Administrative questions on LDRD may be addressed to Darren Ho (dho@lbl.gov).

For additional information about the purpose and implementation of the LDRD program at Berkeley Lab, please click this link: http://www.lbl.gov/DIR/assets/docs/LDRD_Guidelines_10-09-c.pdf

Information about the Laboratory LDRD proposal submission and review process can be found at: http://www.lbl.gov/DIR/LDRD/cfp/process.html

FY 2015 Laboratory Directed R&D (LDRD) Proposal Schedule

Schedule as of December 19, 2013. For any updates, please go to:
http://www.lbl.gov/DIR/LDRD/cfp/schedule.html

December 19, 2013	Director issues call for proposals and guidance for FY 2015 LDRD to Division Directors and staff scientists.
January 6, 2014	Deputy Director re-issues call for proposals and guidance for FY 2015 LDRD to Division Directors and staff scientists as a reminder.
March 3, 2014	Principal investigators submit and lock FY 2015 LDRD proposals in the web-based submission system for Division processing. Associate Laboratory Directors (ALDs) initiate review processes.
March 24, 2014	ALDs select initial list of "Lab-Initiative" proposals and send non-selected proposals back to the appropriate Area for consideration.
April 21, 2014	ALDs complete reviews and rankings for "Area" proposals.
April 21, 2014	ALDs finalize their reviews and recommendations for the "Lab-Initiative" proposals.
April 30, 2014	Presentation and Review Meetings for all FY 2015 "Lab-Initiative" proposals.
May 1, 2014	Presentation and Review Meetings for all FY 2015 "Area" proposals.
July 1, 2014	Director or Deputy Director notifies Associate Laboratory Directors and Division Directors of preliminary FY 2015 awards. Awards will also be announced after the start of the fiscal year in *Today at Berkeley Lab* after DOE approval and authorization to proceed, and after final allocations are made.